

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KAJ O. HENRICSON

Appeal No. 2004-2026
Application No. 09/793,652

ON BRIEF

Before PAK, OWENS, and WALTZ, Administrative Patent Judges.
PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's refusal to allow claims 16 through 20, 22, 23, 25 and 28. Claim 29, the only other claim pending in the above-identified application, has been indicated to be allowable by the examiner. We have jurisdiction pursuant to 35 U.S.C. §§ 6 and 134.

According to the appellant (Brief, page 3):

Claims 16-20[,] 22-23, 25 and 28 may be considered to be grouped as standing or falling together for purposes of this appeal.

Therefore, we select claim 16 from all of the appealed claims and determine the propriety of the examiner's rejection below based on this claim alone consistent with 37 CFR § 1.192(c)(7)(2003). Claim 16 is reproduced below:

16. A method of treating cellulose pulp comprising the sequential steps of:

- (a) digesting comminuted cellulosic fibrous material to produce cellulose pulp, and if necessary oxygen delignifying the pulp, to produce a cellulose pulp with a kappa number of less than 24;
- (b) treating the digested pulp from step (a) in at least one acid-treatment tower at a consistency of 6-25%, a pH of between 2-5, and a temperature between 75-130°C, and in order to prevent the strength properties of the pulp from being deteriorated, at a retention time t in minutes in the acid treatment of between 30-300 minutes, wherein the treatment temperature T in degrees centigrade is $T_{\min} < T < T_{\max}$ in which

$$T_{\min} = \frac{10517}{24 + \ln(2t)} - 273; \text{ and}$$

$$T_{\max} = T_{\min} + 23^{\circ}\text{C}$$

in order to decrease the kappa number of the pulp by 2-9 units.

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The examiner relies on the following prior art references:

Holtinger et al. (Holtinger) 0 622 491 A2 Nov. 2, 1994
(Published European Patent Application)

Lachenal et al. (Lachenal), "Optimization of Bleaching Sequences Using Peroxide as First Stage," 1982 International Pulp Bleaching Conference, pp. 145-151.

Claims 16 through 20, 22, 23, 25 and 28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Holtinger with or without Lachenal.¹

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the examiner and appellants in support of their respective positions. This review has led us to conclude that the examiner's § 103 rejection is well founded. Accordingly, we will sustain the examiner's § 103 rejection for essentially those reasons set forth in the Answer. We add the following primarily for emphasis and completeness.

As found by the examiner (Answer, page 3), Holtinger exemplifies a process for producing a strong pulp of high brightness and low lignin, including a low kappa number of 2.2 to

¹ At page 2 of the Answer, the examiner inadvertently asserts that claims 16-23 and 25-28 are rejected under 35 U.S.C. § 103(a) as unpatentable over Holtinger with or without Lachenal. Claims 21, 26 and 27 are no longer pending in this application.

8.4. See page 6, lines 1-42, Examples 1 and 2, Test 1-3. The process exemplified by Holtinger involves, *inter alia*, treating an oxygen-delignified sulphate pulp of softwood having a kappa number of 15.7 or 8.2 with an acid at a pH of 2 at a temperature of 50 °C for a period of 30 minutes and bleaching the resulting product with hydrogen peroxide.² *Id.* According to page 2, lines 44-45, and page 5, lines 27-38, of Holtinger, the acid-treatment exemplified can also be carried out at a temperature of 10 °C to about 100 °C for a time period of from about 1 minute to about 600 minutes at a pulp concentration of 1% by weight to about 60 % by weight and a pH of up to about 5. See *Merck & Co. v. Biocraft Labs, Inc.*, 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989) ("the fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered"); *In re Boe*, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966) (all of the disclosures in a reference, including non-preferred embodiments, "must be evaluated for what they fairly teach one of ordinary skill in the art").

² The appellant does not argue that Holtinger does not teach the claimed pulp consistency. See the Brief and the Reply Brief in their entirety.

The appellant argues that Holtinger does not teach or suggest the temperature and time period defined by the claimed formula (Figure 1). See the Brief, pages 5-6. However, as indicated *supra*, Holtinger teaches employing in its acid treatment stage certain temperature conditions and time periods which overlap with those included by the claimed formula, in order to produce a pulp product having a reduced kappa number and a good pulp strength as required by claim 16. The acid-treatment step described in Holtinger plays an important role in Holtinger's overall pulp bleaching process responsible for producing a pulp product having the above characteristics. See Holtinger in its entirety.

Thus, we concur with the examiner that it is well within the ambit of one of ordinary skill in this art to employ the time and temperature conditions described in Holtinger, including those claimed, in Holtinger's acid-treatment stage. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). As stated by our reviewing court in *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990):

The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims....These cases have consistently held that in such a situation the applicant must show that the particular range is *italicize* critical, generally by showing that the claimed

range achieves unexpected results relative to the prior art range. [Citations omitted].

On this record, the appellant does not argue, much less refer to, any factual evidence showing that the claimed range imparts unexpected results relative to the range described in Holtinger. See the Brief and the Reply Brief in their entirety.

In any event, Lachenal teaches employing the temperature and time period embraced by the claimed formula in the acid-treatment of the type³ discussed in Holtinger. Compare Lachenal's Table at page 147 showing an actual experiment employing a temperature of 90 °C for a time period of 120 minutes with the appellants' Figure 1 representing the claimed formula. According to Lachenal referring to the above actual experimentation, "raising the temperature in the acid-treatment step [at a time period of 120 minutes] results in a further decrease of kappa No..." See page 147. Contrary to the appellants' argument, the fact that Lachenal at page 150 also mentions employing 60 to 80 °C does not negate the actual experiment and teaching discussed above.

Thus, we determine that one of ordinary skill in the art would have been led to use the temperature and time embraced by the

³ As urged by the appellant (Brief, page 6), the acid treatment described in Lachenal, like that described in Holtinger, is used to remove transition metals.

claimed formula, such as the one taught by Lachenal, motivated by a reasonable expectation of decreasing the kappa number of the resulting pulp product.

The appellant argues that it would not have been obvious to eliminate the intermediate wash stage required by Holtinger. See the Brief, page 6. However, claim 16, by virtue of using the transitional phrase "comprising", does not preclude the intermediate wash stage (after the acid treatment) taught by Holtinger. See *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CC PA 1981) ("As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term 'comprises' permits the inclusion of other steps, elements, or materials.").

Under the circumstances recounted above, we concur with the examiner that the preponderance of evidence weighs in favor of a conclusion of obviousness. Thus, we affirm the decision of the examiner rejecting all of the appealed claims under 35 U.S.C. § 103.

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No time period for taking any subsequent action in connection
with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

CHUNG K. PAK)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
TERRY J. OWENS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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THOMAS A. WALTZ)	
Administrative Patent Judge)	

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